

Introduction

Purpose

This document is intended to provide the information necessary to properly engineer a Meridian 1 switch. A switch must be engineered upon initial installation, during upgrades, and when traffic loads change significantly, or increase beyond the bounds anticipated when the switch was last engineered. A properly engineered switch is one in which all components work within their capacity limits during the busy hour.

The engineering of functionality of major features such as Automatic Call Distribution (ACD) or Network Automatic Call Distribution (NACD), and of auxiliary processors and their applications, such as Meridian Mail and Meridian Link Module, is not the topic of this document. Guidelines for feature and auxiliary platform engineering are given in documents relating to the specific applications involved. Sufficient information is given in this document to determine and account for the impact of such features and applications upon the capacities of the Meridian 1 itself.

This document is not intended to provide a theoretical background for engineering principles, except to the extent required to make sense of the organization of the information. Furthermore, technical details and data are sometimes omitted, when the impact is sufficiently small. This helps to control the complexity of the presentation.

Scope

All Meridian 1 systems currently supported in the North American market are covered by this document: ST, STE, NT, XT, and options 11C, 11E, 21, 21E, 51, 51C, 61, 61C, 71, 81 and 81C. Release dependent data is given for the currently supported releases on these system types as described in [Table 1](#).

Table 1
Releases that are currently supported on systems

	X11 Release								
	15	16	17	18	19	20	21	22	23
ST	x	x	x						
STE				x	x	x	x		
NT	x	x	x	x	x	x	x		
XT	x	x	x	x	x	x	x		
11C								x	x
11E						x	x		
Option 21	x	x	x						
Option 21E				x	x	x	x		
Option 51	x	x	x	x	x	x	x		
Option 61	x	x	x	x	x	x	x		
Option 71	x	x	x	x	x	x	x		
Option 51C/61C/81/81C				x	x	x	x	x	x

The impact of the NT proprietary auxiliary processors on the Meridian 1 is included in this document. For engineering of the auxiliary processors themselves, please refer to the documentation specific to that product.

The capacity impact of specific third party products that interface with the Meridian 1 is not addressed. However, certain generic factors are described which may be used to assess the impact of such products, so that their effect may be included in the engineering process.

Audience

The primary audience for this document are the system engineers responsible for engineering the switch, and the NT Technical Assistance Support personnel who support them. The engineer may be an employee of the end user customer, a third party consultant, or a distributor.

It is expected that the engineer attempting this process will have several years of experience with Meridian 1 systems.

Other persons who may be interested in this information, or find it useful, are Sales and Marketing, Service Managers, Account Managers, Field Support, Product Management, and Development.

How to use this document

There are two major purposes for using this document: to engineer an entirely new system, and to evaluate a system upgrade. The procedures for these activities are described in this document.

The Meridian Configurator System provides an alternative to the manual process given in this document. It is beyond the scope of this document to describe the Meridian Configurator process.

Engineering a new system

[Figure 1](#) illustrates a typical process for installing a new system. The function expected to perform each step of the process is listed to the right of the block. The highlighted block is the subject of this document. It is expanded on in [Figure 2](#).

Figure 1
Engineering a new system

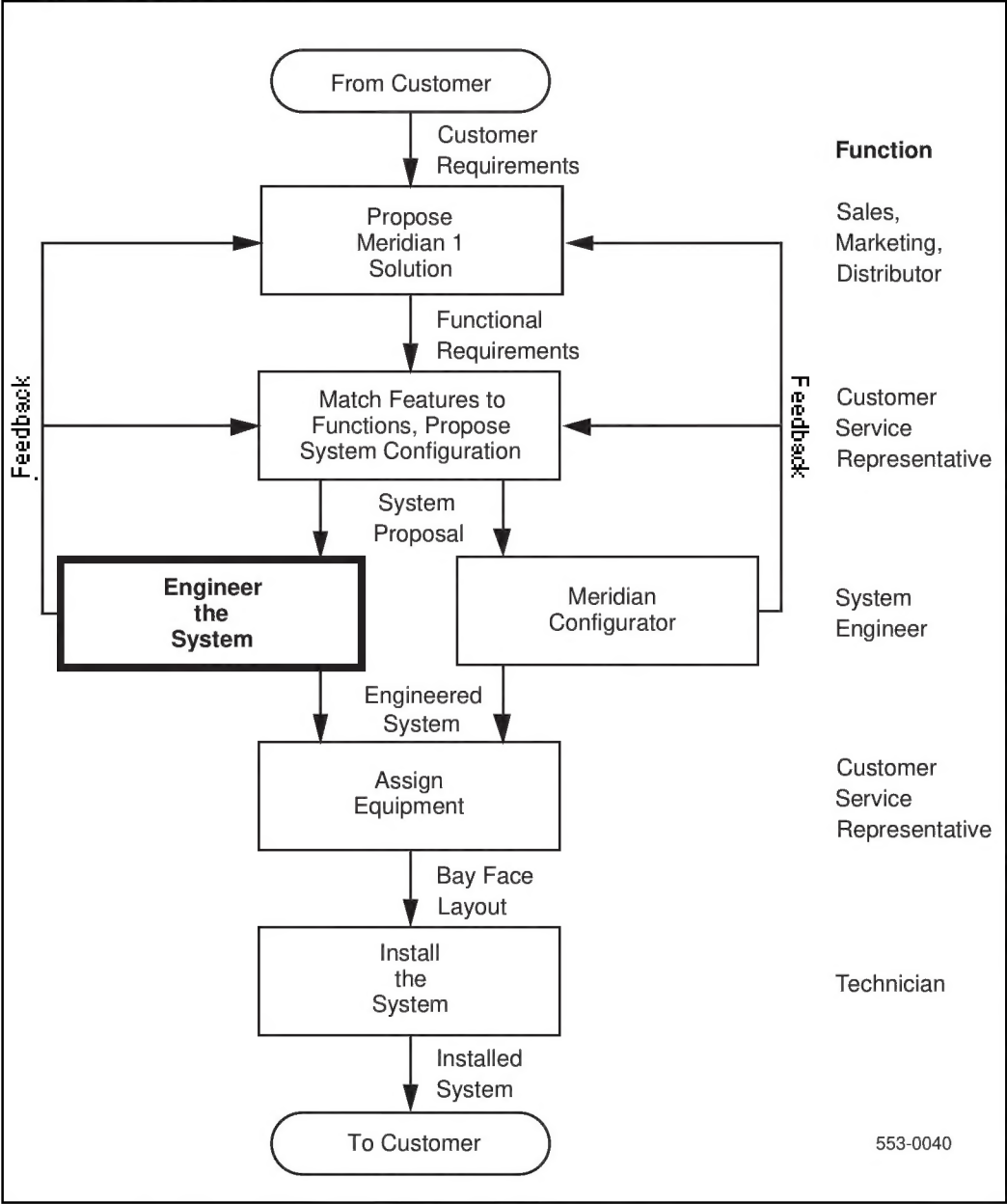
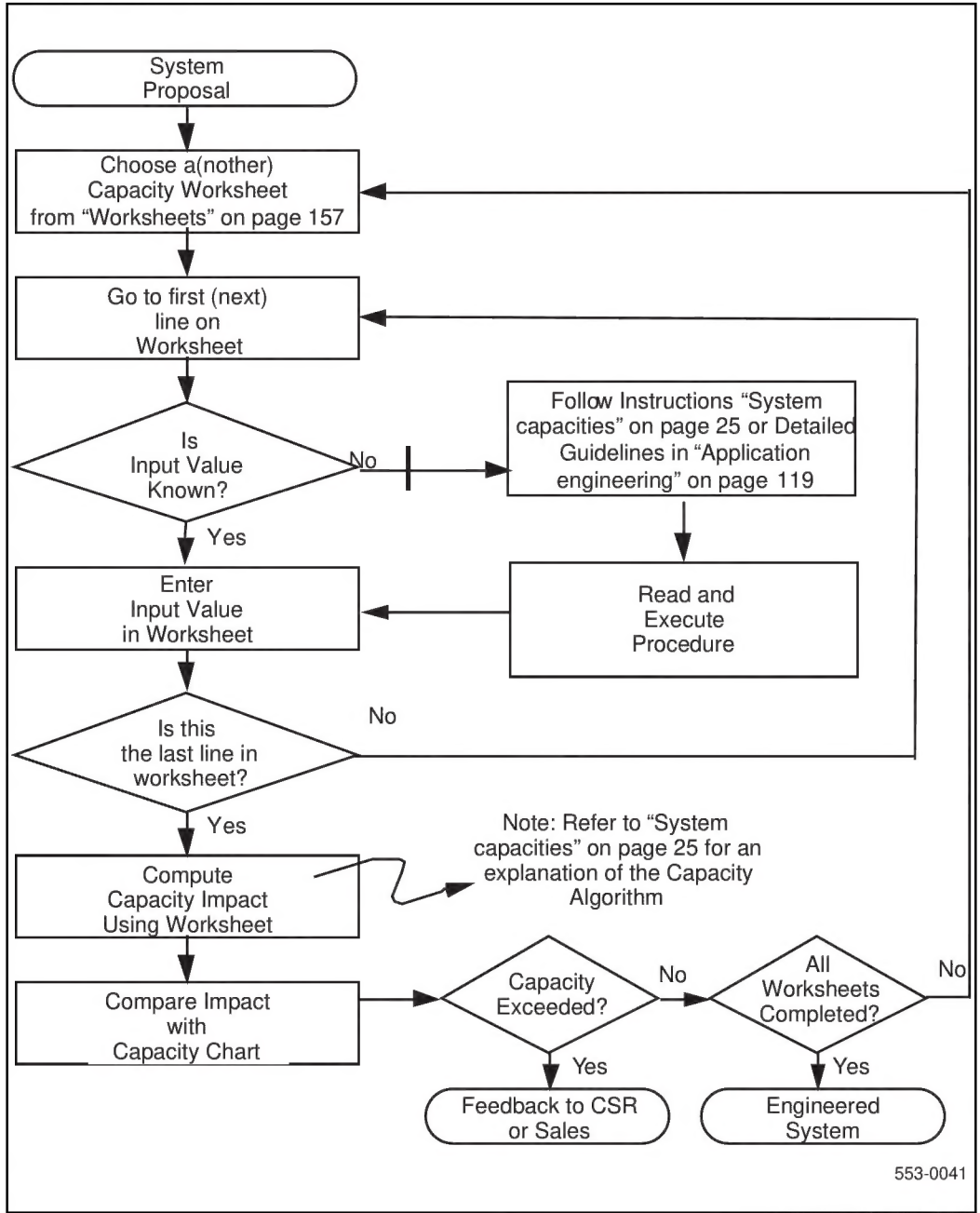


Figure 2
Engineer the system



Engineering a system upgrade

In cases of major upgrades, or if current resource usage levels are not known, it is recommended that the complete engineering process be followed, as described in the previous section.

If minor changes are being made, the incremental capacity impacts can be calculated and added to the current resource usage levels. The resulting values can then be compared to the capacity chart to determine whether the corresponding capacity has been exceeded.

Other resources

This section contains a short description of tools available to assist the site engineer, sales person, and/or customer in engineering the switch. Differences between the tools, their platforms and implementation and usage are described.

Meridian Configurator

The Northern Telecom Meridian Configurator allows users to prepare quotations for a new Meridian 1 system. Meridian Configurator supports system sales by analyzing input specifications for a digital PBX to produce a full range of pricing, engineering reports, and graphics. These reports include a complete equipment list, part numbers, software listing, engineering capacities, and pricing for currently available Meridian 1 configurations.

Meridian Configurator runs on the user's own DOS/Windows-based personal computer. Specific system requirements depend on the version of Meridian Configurator. For details, contact the Nortel account team or Nortel DSM.

Meridian Configurator implements the algorithms specified in this document for real time, memory, and physical capacities. It is the official tool for determining whether a proposed configuration will meet the customer's capacity requirements.

Where applicable, in this document, references are made to the Meridian Configurator inputs which correspond to parameters being described.

Autoquote

Autoquote provides essentially the same services as Meridian Configurator, except that it operates on a centralized processor located in Northern Telecom's Business Services Group in Richardson, Texas. Access is via modem from a user-owned personal computer.

The interface to Autoquote is textual, rather than graphical, but the reports contain essentially the same information as Meridian Configurator reports. Autoquote is the tool that has been in use up until X11 release 19.

1-Up

The Meridian 1 Upgrade Configuration Tool (1-Up) provides an efficient means to engineer Meridian 1 upgrades. It incorporates the engineering rules and pricing data required to upgrade an existing system to the latest hardware/software platform. It also includes the Autoquote algorithms used for new systems to permit port expansion and application add-ons as part of the upgrade proposal.

1-Up is a Windows™ PC application.

